

Thus improvements in the mechanism and processes by which materials are wrought into articles of commerce, whether for food, for apparel, or for decorative purposes, occupy a large portion of this section.

Now, that the screw propeller is advancing into general favour, the loss of power in its transmission through a long shaft is sought to be overcome, by the adaptation of some method of propulsion nearer, and in more immediate connection with the motive power (No. 43). The method of working mouldings and other architectural features in granite (No. 55), and the means for avoiding interference with the utterance of a voice in the construction of large buildings (No. 62) will be recognised as useful practical desiderata.

In the section of manufactures, glass seems to take the lead: seven questions (Nos. 86 to 92) being directed at all kinds, stained, crown, flint, and cast. The great impetus given of late to this branch of manufacture, and the recent extended application of glass to photographic and optical purposes, have caused many important alterations and improvements, which it is very desirable should be recorded.

Somewhat allied to this is the manufacture of Parian, China, and earthenware, and the difficulty in the process of firing or baking has caused a premium to be offered for improvements in the construction of kilns for this purpose (No. 93).

The list, which includes 112 subjects, forms the groundwork for a session of great usefulness, if responded to by the members and the public as it ought to be.*

ANCIENT PROCLAMATIONS.

THE Society of Antiquaries are in possession of a singularly fine collection of Proclamations, the finest, indeed, existing, and these have been placed in the hands of Mr. Lemon, of the State Paper Office, to arrange for binding, with proper indices. The collection is weak in parts, especially as concerns the reign of Elizabeth, and our object in mentioning the steps now being taken is to induce any of our readers who may have detached proclamations, for which they may not care, or duplicates, to contribute them to the society's collection, so as to render it as nearly complete as may be. In glancing at a number of the proclamations a few days ago, the first that met our eyes was one dated in the reign of Charles II. 1671, against the increase of buildings in the metropolis, and showing that in Windmill fields and the fields adjoining Soho, small houses were being improperly carried up.

A WORKING MEN'S MUTUAL BENEFIT SOCIETY FOR ENGLAND AND WALES.

A PROSPECTUS has been issued, in which it is proposed—"1. To establish a Provident Fund without entrance fees, to which working men are to contribute either during the whole year, or a proportionably increased amount from the first Saturday in March to the last Saturday in November in each year; 2. To form by donations and subscriptions an Auxiliary Fund."

The society to be managed by a central committee with district committees, the business of each district to be mainly managed by the latter. Members passing as residents from one district to another to have their benefits also transferred or provided for by the district committee to which they belong. The central committee to manage generally, and distribute the auxiliary fund. Amongst other provisions, it is proposed that "To the provident fund any male person above the age of thirteen and under forty-five may, at the discretion of the district committees, be allowed to belong, on satisfactory proof of age, health, and moral character being given. The members to have the option of contributing for an allowance, until the age of sixty-three, of seven, nine, twelve, or fifteen shillings a week during the first six months, and of half the respective amounts for the next six months of sickness,

and then, if disabled by any bodily infirmity from earning a livelihood, they shall be entitled to have one-third the respective amounts of the sick allowances; but members under the age of twenty will receive during the same periods only one-half the respective amounts of the sick allowances. Members, on attaining the age of twenty, or on entering if above that age, will also be required to contribute for an annuity to be received after the age of sixty-three, of three or more shillings a week. Members to have the option of paying an increased rate of contribution when desirous of having, if they die before the age at which the annuity is to commence, half their payments returned to their widows or children."

It is proposed to connect good local enrolled benefit clubs with the society, under certain regulations. Mr. Samuel Comyn, barrister, of Lancaster, is acting as honorary secretary.

MOVING LOADS.

PERHAPS the following extract from Dr. Lardner's "Steam Engine," ed. 1836, will answer the question of "E. S. S.":—

"On a level railroad, the force of traction necessary to propel any load placed on wheel carriages of the construction now commonly used, may perhaps be estimated at 7½ pounds for every gross ton in the load."

Thus, $50 \times 7\frac{1}{2} = 375\frac{1}{2}$, the tractive force in pounds, to move 50 tons. Telford gives from $\frac{1}{10}$ to $\frac{1}{15}$ of the load as the resistance to traction on a well-constructed railroad. The former gives 400 pounds as the motive force required for 50 tons, the latter 480 pounds.

The co-efficient of friction on railways may be taken at $\frac{1}{10}$, or 7 lbs. per ton. That is, a horizontal pressure of 7 lbs. will just move a load of 1 ton on a level rail; whence, to move 50 tons will require a pressure of $7 \times 50 = 350$ lbs.

From the enunciation of the question, your correspondent "E. S. S." seems to require what would be the strain on the chain dragging the load, and he appears to think that this strain becomes greater or less as the speed increases or decreases. This, however, is not the case; for no matter how great or how small the speed, provided it is uniform, the dragging medium still transmits the same pace. But the quantity of power transmitted in a given time, varies greatly at different velocities.

For example, let us take two of the cases supposed by "E. S. S." Required the power requisite to drag a load of 50 tons at the rate of ten miles per hour on a level rail. Also the power requisite to drag the same load at the rate of two miles per hour.

The resistance of friction is $7 \times 50 = 350$ lbs.; space in feet travelled over in a minute = $\frac{5280 \times 10}{60} = 880$. Power, passing through one foot of space per minute = $350 \times 880 = 308,000$ lbs.

That is, the power applied is equal to a weight of 308,000 lbs. lifted through the space of one foot in every minute. If we take a horse power as the force necessary to lift 33,000 lb. through a foot of space per minute, the number of horse power applied will be $\frac{308,000}{33,000} = 9\frac{1}{3}$.

By the same method we find that with a speed of two miles per hour, the work performed = 61,600 lbs. lifted one foot per minute, or $\frac{1}{4}$ of the power in the former case.

Atmospheric resistance (which increases as the square of the velocity) is here neglected, as it depends on the bulk of the load.

T. D. RIDLEY.

EXTENSIVE DAMAGE ON THE GREAT WESTERN RAILWAY.—The traffic on this line has been impeded in consequence of a series of slips having occurred between Paddington and Hanwell station. The line was flooded for several miles, by water breaking through the sides of the cutting; and it was further discovered that in about thirty or forty places extensive slips had taken place, principally on the up-line.

HOUSE AGENTS' CHARGES.

JONES v. GOWDLY, M.D.—This was an action brought in the Marylebone County Court, before Mr. F. Adolphus, judge, to recover 9l. 1s. 9d. for agency and other charges.

It appeared that in April last Dr. Gowdly gave instructions to the plaintiff to let his house, 25, Chester-street, furnished, at 6l. per week. This the plaintiff effected, and at the request of the tenant incurred various necessary expenses in cleaning and small repairs,—such as keys to doors, cleaning windows, &c.; as also taking the inventory and drawing agreements, &c. in addition to the commission for letting the house.

Defendant disputed his liability to reimburse the plaintiff, on the ground that the retainer to act as his agent did not include any authority to charge the defendant with any of the extra items.

In support of plaintiff's case several witnesses were called to prove the work done, and reasonableness of the charges; and Mr. Thomas Langridge, from the office of Mr. Lahee, of Bond-street, was called to prove the general usage of house agents in this particular.

Defendant was heard at considerable length in support of his case.

The learned Judge, after carefully going through the evidence, gave judgment for the plaintiff to the amount claimed.

Notices of Books.

History in Ruins: a Series of Letters to a Lady, embodying a Popular Sketch of the History of Architecture, and the Characteristics of the various Styles which have prevailed. By GEORGE GODWIN, F.R.S. of the Royal Institute of Architects, &c. &c. With Illustrations. London: Chapman and Hall, Piccadilly. Dublin: James McGlashan.

OUR readers are so well acquainted with the "Sorillah" letters which form the staple of the book mentioned above, that all we have any occasion or right to say here is, that it is a well printed, nice little volume, well adapted for presentation in the coming Christmas time, and calculated, as we sincerely believe, to aid in a good work. We shall be excused, we hope, for quoting the author's preface:—

"The history of the world is, forcibly illustrated by the history of its buildings; and the tale, so far from being dry and repulsive, is singularly curious and interesting. In the following pages an endeavour has been made to convey this history to general readers in popular language and a pleasant manner, and to interest them in an art which affects not merely our homes and the provision of structures for the fitting discharge of public duties, but the artistic progress, the æsthetic culture, and refined enjoyments of a people;—an art which is the eldest of the three and the guardian and encourager of her sisters,—an art that has recorded in stone and marble the thoughts and doings of nations, and studied the world with objects of beauty, places of reverence, and awakens of sentiment. The various shapes that architecture took,—the characteristics and date of the styles which have prevailed amongst different people and at different times,—are pointed out, so that any man, with slight attention, read, on the face of such buildings and monuments as they may visit, their age and story. It is not unusual to find even educated men admitting, without any feeling of shame, their entire ignorance of architecture, both as regards its history and principles. This surely ought not to be, and need not be. The general history of the art, and the leading features of architecture as a science, should be communicated to the youth of both sexes and of all grades before they leave school. The greatest success that can be desired for this little volume is, that it may aid in leading to such a step."

The author inscribes it to the friend by whom, feeling the want of some such manual, the letters composing it were suggested, and asks for it the kindly consideration of all who agree with him in thinking that its object is a worthy one; in which request we join, with exactly the same amount of interest in its success.

MASTERS AND MEN.—We have received communications from the workmen of two or three establishments asking us to mention, that their employers had given them time to attend the funeral of the Duke of Wellington, and had paid them for the full day. We mention the letters as showing proper appreciation of a kindness, but need not do more.

* Special prizes are offered for Essay on Jurisprudence (100l. and gold cup), and for Essays on Management of Literary, Scientific, and Mechanics' Institutions (50l. and 20l. with medals).